

PATENT ABSTRACTS OF JAPAN

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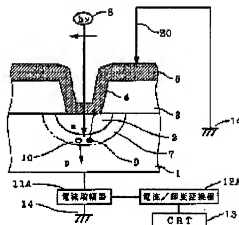
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(54) METHOD AND APPARATUS FOR INSPECTION OF SEMICONDUCTOR DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To obtain a method and an apparatus in which a photovoltaic current and an external current can be analyzed without a mechanical probing operation by a method wherein a charged beam irradiates a wiring layer connected to a p-n junction part and a current which flows so as to be related to the generation of carriers is detected.

SOLUTION: A charged beam 20 irradiates a wiring layer 5 which forms a contact, an electric charge is supplied to the wiring layer 5, and carriers which are separated by a depletion layer 7 disappear due to the electric charge. Then, a negative electric charge corresponding to the amount of an electric charge which disappears is supplied from a ground potential point 14 connected to the backside of a silicon substrate 1. Thereby, a current is generated, and a photovoltaic current can be detected from the backside of the silicon substrate 1. The current is luminance-converted, it is synchronized with the scanning operation of a laser beam 8 so as to be displayed on a CRT 13, and a two-dimensional photovoltaic current image is obtained. Thereby, a control operation by a mechanical probing operation in conventional cases is eliminated, the current in an arbitrary place can be analyzed, and the contact can be analyzed during a production process.



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